stone-celts are considered to be thunderbolts—a belief so universal in historic times that it may be said to have been held *semper, ubique, et ab omnibus.* There is, in fact, no difference of opinion between the old Greek Sotacus and the Chinese Emperor Kang-hi's encyclopædist (A.D. 1662). The former informs us, through Pliny, as translated by Philemon Holland, that "there be two kinds of Cerauniæ, to wit, the black and the red," and, "that they doe resemble halberds or axe-heads." The latter that "some of the lightning-stones have the shape of a hatchet, others that of a knife, and some are made like mallets. They are of different colours; there are blackish ones, others are greenish."

The curious similarity observed among Megalithic monuments in different parts of the world may possibly be due to some analogous development of thought and feeling rather than to any intimate connection between the races who erected them. The Dolmens of Algeria, described by Mr. Flower, those of Brittany by Mr. Lukis, those of the Aveyron by M. Cartailhac, are all, more or less, closely allied to the ancient sepulchres and Pandukulis of the Nilagiri Mountains in Southern India, described by Sir Walter Elliot.

We cannot close this brief notice without mentioning one of the most carefully illustrated and important contributions to the volume,—the account of the caves of Gibraltar, in which human remains and works of art have been found, by Mr. George Busk, who, in company with the late Dr. Falconer, visited the scene of the explorations of Captain Brome, which are now unfortunately suspended, but of which the record drawn up by himself is here preserved, and additional value given to it by the commentary of Mr. Busk.

We have, we hope, said enough to show the interesting character of this volume of the Transactions of the Congress, and the reports of the meeting at Copenhagen lead us to hope that it may next year be productive of another volume of at least equal value.

JOHN EVANS

THE WORLD OF THE SEA

The World of the Sea. Translated and enlarged by the Rev. H. Martyn Hart, M.A., from "Le Monde de la Mer," by M. Moquin Tandon, Membre de l'Institut, &c. Demy 8vo. pp. 500, with coloured and tinted plates and numerous woodcuts, price 21*s.* (London: Cassell, Petter, and Galpin.)

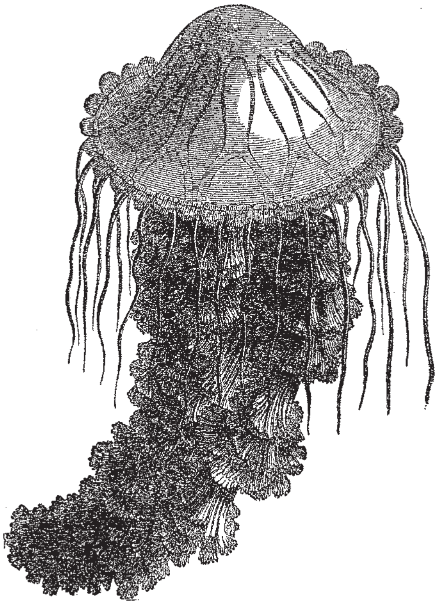
THERE are two methods of reviewing a book, the ungracious and the gracious. One, and the easier, is to find all possible fault with it; to prove, at least to the critic's own satisfaction, how much better he could have written the book, if he too had had the time, and the money, and the will. As for the talent, the critic has that, as a matter of course; for is not a critic one who judges other men, and is therefore wiser than they? And as for the knowledge, that is not needed. He may acquire that in the very process of reviewing, from the book which he reviews. Thus, following nature in economising force as much as possible, he is at once learner and teacher; judge and—parasite? Taking another man's materials, he shows the world how much better a house he could have built with them; and so has the clear profit of all the author's work, his carrying of the bricks and mortar, even his planning the house, beside all the expenses incident thereto, at the cost on his own part of a few suggestions which he is not even at the trouble of seeing carried out. Thus he leaves the hapless man, who has tried to do something, instead of sitting still like the reviewer, and seeing others do it, to cry *Sic vos non vobis;* and after a few more attempts to write books, to give up in despair, and take to the more easy and profitable employment (at which every lad can now earn an honest penny), of showing how books should have been written.

But the other, or gracious method of reviewing a book, is to ascertain what the book is really worth, at least to the class for whom it is written; and if it be worth anything, to recommend it to them heartily; being sure that attractiveness is no test of value, and that there is no more utter fallacy than that good wine needs no bush.

Unfortunately, this gracious and hearty method of reviewing a book is not only difficult, being contrary to the affections and lusts of the animal within, who delights to bite and devour his kin, while he is indignant at the very notion of his ancestors having been cannibals: but it is also morally dangerous; for if the reviewer begins by being gracious and hearty, he may descend to kindness, even to indulgence. He may be to the author's "faults a little blind, and to his virtues very kind;" and so fall altogether from that boasted impartiality which surely portends detraction.

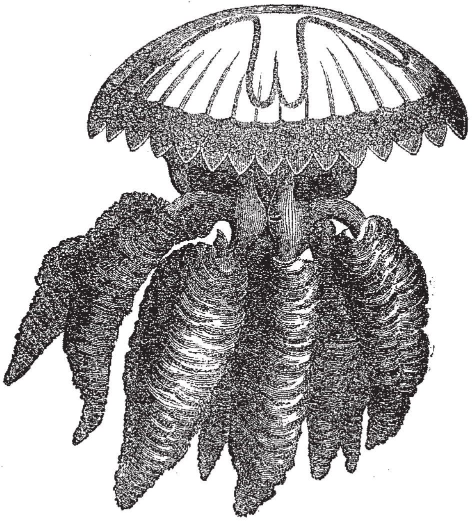
For the sake, therefore, of preserving the virtue of impartiality, it is most prudent for the reviewer to begin by complaining, and to say that this very beautiful book has certain defects, which he hopes may be amended in future editions (for he must be allowed to be gracious enough to hope for future editions); that several of the most important and novel illustrations have no authority appended; that the very clever drawing of the sea-lions has not only no authority, but no description or notice in the text; that some chapters are meagre, and some of the illustrations bad—for instance, the Holothurians, of which only two very poor and inaccurate cuts occur; that the large drawing of Cuttle-fish is also very bad and wrong; and that there are many misprints and misspellings (possibly mere faults of the printers, but still faults), such as *rostro* for rostrum, *Ottary* for Otary, *a* Poritidæ, *an* Alcyonideæ, &c., which must be corrected; and that, as a whole, the latter part of the book is inferior to the beginning. It may be, of course, that this is owing to the simple fact, too common among other classes besides publishers, that the money did not hold out; or that the book, if finished in the style in which it was begun, would have grown too big to be published at a paying price. But what has a reviewer to do with excuses and with mercy?

Having thus fulfilled his duty, he has something of a right to take his pleasure; and to say—Here is a really beautiful book. It is a pleasure to turn over the pictures; a pleasure to think that it will lie on many tables, teaching folk, especially young folk, a thousand things which those of the last generation did not learn, hard as they worked, each for himself alone, simply because the works which could teach them were not yet written; nay, the microscopes which could show the facts not yet made. The text is, as is to be expected from M. Moquin Tandon, brilliant, interesting, full of feeling for that wonderful and poetic element which runs through nature, and should therefore run through sound physical science. The illustrations are, on the whole, very good indeed; the large tinted plates altogether exquisite; notably one of the development of corals; and many of the cuts are not only accurate, but real works of art; for instance, a drawing seemingly from a photograph, of sponges, &c., on laminaria stems, and three drawings of medusæ, pp. 132-4, in which the grace and grandeur of the natural outlines has been excellently preserved.



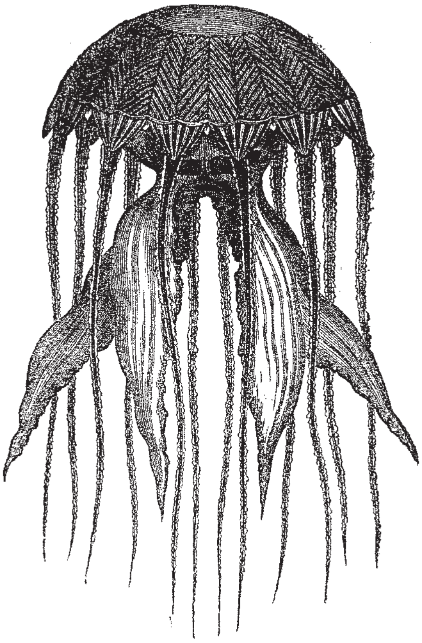
THE BEAUTIFUL-HAIRED MEDUSA (*Cyanœa euplocamia*)

Especially do the author, translator, and publishers deserve thanks for the mere number of the illustrations.



THE CROSS MEDUSA (*Rhizostoma cruciata*)

If the wonder of nature is ever to be got into the heads of the uneducated (rich or poor) it must be done, in the long run, through the eye. "Pictures," said certain men of old, "are the books of the unlearned;" and they used them with effect during the middle ages, to get into the heads of men wonders which—nineteen twentieths of them—never happened at all. Let Science, now her turn is come, use to the utmost of her resources, the same engine, to get into the heads of men—and of children from their earliest years—some of the wonders which are actually happening round them all day long. Let scientific men, therefore, welcome graciously this book, and all books of the kind, in spite of a few defects of haste or of insufficient knowledge. Let them recommend it to their friends—especially to those who have children. And if any shall raise the cry of "book-making," let them answer, "What else would you have?" In this age of "specialisation," when each minute branch of physical science requires a life-time of research, how are the many unscientific to be taught the vastness and beauty of Nature, save by book-makers; by those who take the results of other men's labour, and cast them together into a shape which the many will care to look at? Provided they do not actually steal, allow them to borrow as freely as they will. What they borrow from the scientific writer, they will repay him a hundred-fold, in the form of pupils readers, and enlightened public opinion. Meanwhile, those who wish well to the cause of Truth, may trust that by every book of this kind one more human being will be awakened to the magnificence, as well as the importance, of facts; one more will be saved from the ancient empire of unreason; one more will be inclined to give rational glory to God, as he discovers how glorious His works are, even in the minutest polype; one more artist will discover, in his search for the beautiful, that the world contains a few objects quite as worthy of his pencil, as a Scotch fir-tree, or a country lane; and one school-boy, it may be, or even undergraduate, seeing this book in his sister's hands while he is at home for the vacation, will be led to inquire (not without reason)



THE MEDUSA OF GAUDICHAUD (*Chrysaora Gaudichaudii*) why he also is not taught something about these strange and beautiful works of God, and something of the science which investigates them, instead of the mispronounced Latin and Greek, in learning which (and most imperfectly) he spends the ten or twelve golden years of youth. He will receive for answer (or rather he will soon learn to answer himself) that those who have the monopoly of education know nothing of these matters, and therefore cannot teach them; while those who do know about them are not asked to teach them, because they will not pay in an examination. But that discovery may make him resolve, for the sake of his children or his younger brothers, to do what in him lies when he grows up, to alter radically the course of instruction now pursued in almost every boys' school in these islands; in which case this book, and others like it, will not have been published in vain.

C. KINGSLEY

BARFF'S HANDBOOK OF CHEMISTRY

An Introduction to Scientific Chemistry; designed for the use of Schools, and Candidates for University Matriculation Examinations. By F. S. Barff, M.A. Second Edition. Fcap. 8vo. pp. xv. and 315, with woodcuts, price 4*s*. (London: Groombridge.)

THE rapid progress of experimental discovery is in itself an obstacle to the elementary teaching of any scientific subject. Nowhere has the truth of this observation been more frequently attested than in chemistry, a science which, during the present century, has had a more brilliant, or at least a more active, career than any of its old companions. We cannot, therefore, be surprised that the superior attractions of research have so far had a depreciating influence on the dogmatic department of this study, that many chemical manuals are meagre, partial, or unsystematic. It is true that a large number of such books has appeared during the last few years, under the powerful stimulus of an increasing demand for chemical education; but their general character is such as we have assigned, and the composition of a treatise for the use of school-boys seems to have been in many cases shelved, as either too humble or too great a task for an author.

Such considerations induce us to welcome very cordially the little handbook which Mr. Barff has just republished. The first edition must be too well known, and too fresh in the memory of many of our readers to render any detailed reference to the present one necessary. The writer's efforts have evidently been directed towards attaining as much as possible of both clearness and brevity in exposition; but his tendency to avoid speculative assumptions is still more meritorious. No one is more sceptical than a boy; no one more difficult to convince by experiment of the truth of a theory. The teacher will therefore economise his time in the most useful manner by putting before his class only the simpler practical illustrations in which he knows he can succeed, and but a few of the most general and securely established laws. Hence Mr. Barff has boldly, but very judiciously, postponed the entire discussion of formulæ and symbols to the concluding portion of his work, using in its former part only absolute units of weight and measure—which, of course, have the advantage over the usual abstract numbers, that an audience can see and handle them. The nomenclature is that first systematised by Berzelius, and introduced into this country by Professor Williamson; it has also been adopted of late in the examinations of the University of London.

The method of imparting elementary instruction in chemistry is, as we have indicated, neither mature nor on the point of attainment. But whatever course may ultimately be decided upon, we can hardly doubt that it will include Mr. Barff's fundamental principle. Meanwhile this little volume, with its business-like spirit and undeniable accomplishment of its design, deserves the general and hearty commendation of teachers.

E. J. MILLS

OUR BOOK SHELF

Contribution to Climatology.—*Klimatologische Beiträge.* By Professor A. W. Dove. (Berlin, 1869.)

ISOTHERMAL Charts like those published by Professor Dove in 1864 derive their chief interest from the fact that they permit a birds'-eye view of the great climatological features of the globe, but they are of comparatively little value to the meteorologist, unless accompanied by the numerical data on which they are founded. These are now supplied by the publication of the present volume, which, however, contains also a great deal of matter of interest to the intellectual community generally. The introductory remarks to the tables on the climate of Western Europe, and on non-periodical meteorological phenomena, will show that the distinguished author has just claims to be considered the greatest master of meteorological generalisations.

B. L.

Wonders of Italian Art.—By Louis Viardot. Small 8vo. Pp. 257. Illustrated with photographs and engravings. (Sampson Low & Co.)

IF photographs were not children of the sun, and if artists were not sometimes—like Leonardo da Vinci—men of science, and would always work the better for a knowledge of it, and if scientific men were not among those who can most highly appreciate works of art, this book would hardly come within our programme. It is a beautiful book, full of beautiful photographs and engravings of the best and most typical pictures of the Italian school, and one altogether refreshing to look upon. We should also add, that it is translated from the "Bibliothèque des Merveilles," which contains so many works on science.

Astronomical Publications.—1. *Astronomische Mittheilungen von der Königlischen Sternwarte zu Göttingen.* (Göttingen, 1869.) 2. *Sammlung von Hilfstafeln der Berliner Sternwarte.* By W. Foerster. (Berlin, 1869.)

THE first publication is an account of some recent astronomical labours at the Observatory in Göttingen, and contains the results of observations with the meridian circle in zone 0° and 1°, made in accordance with the well-known scheme of a zone revision so successfully initiated and established by English and Continental astronomers. The volume, which deserves in every respect the special attention of star observers, contains the mean places of stars up to the ninth magnitude, reduced to 1875·0. A new method of calculating the determinations of time, originally proposed by Gauss, has been for the first time made use of by the observers. It is shown at page ix. of the Introduction, and will be found of the highest merit.

The Berlin publication contains a set of tables for the routine business of the Observatory. Although calculated with reference to the local circumstances of the Berlin establishment, they are likely to be instructive elsewhere, their arrangement being extremely compact and at the same time lucid.

B. L.